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Research article

Linking self and ingroup: Self-anchoring as distinctive cognitive route to social identification

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Abstract

The present paper investigates how cognitive projection processes instigate social identification. We complement the classical self-stereotyping approach (i.e., conforming to prototypical group norms) by investigating self-anchoring (i.e., projection from self to group) as a distinct cognitive route to social identification. Self-anchoring has mainly been investigated as predictor of intergroup differentiation. Surprisingly, no reliable link has been provided yet between self-anchoring and social identification. In Study 1, we provide first evidence for this positive link. In Study 2, we add self-stereotyping to our model and show that self-anchoring is still positively related to social identification when controlling for self-stereotyping. Additionally, we show that self-anchoring is positively related to affective components of identification, while self-stereotyping is positively related to cognitive components. Moreover, we examined the impact of self-concept stability on self-anchoring. Self-concept stability was positively related to self-anchoring, and hence to social identification (Study 1), independently from self-stereotyping (Study 2). In the discussion, we argue that disentangling self-anchoring from self-stereotyping is important as it increases our insight in how people identify, and how this may vary depending on self-concept and group context. Copyright © 2011 John Wiley & Sons, Ltd.

Affiliation with groups is an innate human need. Without social connectedness, people become prone to aversive states like mental and physical illness, and behavioral problems ranging from lying and stealing to even suicide (Baumeister & Leary, 1995). Thus, social identification with groups is essential, not only for individual's well-being, but also for group functioning in general (for an overview see e. g., Haslam, Van Knippenberg, Platow, & Ellemers, 2003). To encourage and stimulate identification, it is important to know *how* individuals identify with groups. In this paper, we take a cognitive approach in trying to answer this question, starting from the assumption that the psychological basis for identification is the self—the personal or the social self.

Social identification implies the presence of perceived mental overlap between self and group (Smith & Henry, 1996). More overlap between self and group instigates higher levels of social identification (Coats, Smith, Claypool, & Banner, 2000; Tropp & Wright, 2001, 2003). Classical social identity theorists argue that this mental overlap emerges by projecting prototypical group characteristics onto the self (i.e., *self-stereotyping*). In this case, the psychological basis for identification is the activation of the social self, while the personal self shifts to the background. However, one can easily conceive groups which lack clear prototypes such as new, complex, or diverse groups. Moreover, even groups clearly defined on one dimension (i.e., “Psychologists are emotionally intelligent”) often lack a clear definition on other dimensions (i.e., “Are psychology students creative?”).

In such cases, it seems difficult to activate a social self due to a lack of group prototypes. Therefore, we argue that in addition to the social self, the *personal* self can also be a basis for social identification. In this case, mental overlap emerges by projecting personal characteristics on the group (i.e., *self-anchoring*).

Self-anchoring (or, more generally stated, *social projection*¹) has mainly been studied as a judgmental heuristic that can account for intergroup differentiation (e.g., Robbins & Krueger, 2005). However, to date self-anchoring has not yet been thoroughly investigated to understand its impact on social identification with one's own groups. Therefore, we investigate this link and, importantly, we empirically distinguish the impact of self-anchoring on social identification from self-stereotyping. To the best of our knowledge, such an empirical test has not yet been provided. The present paper aims to fill this gap by investigating how self-anchoring can provide a distinct cognitive route to social identification, independently from self-stereotyping. Additionally, we also investigate how variations in the stability of the self-concept influence the extent to which people self-anchor in order to facilitate social identification.

SELF-STEREOTYPING AND SELF-ANCHORING

Self-stereotyping has been studied extensively within social psychology. Following from Social Identity Theory (SIT; Tajfel

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¹The terms *self-anchoring* and *social projection* are often used interchangeably in the literature, thereby referring to the process of using the self as a heuristic to make group judgments (e.g., Krueger, 1998; Krueger & Stanke, 2001). For ease of readability, we only use the term self-anchoring in the present paper; moreover, in the literature self-anchoring has more often been related to group processes such as ingroup favoritism and intergroup differentiation. Yet, conceptually we consider the two terms as equivalents.

& Turner, 1979) and Self-Categorization Theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), self-stereotyping has traditionally been seen as *the* crucial process explaining how mental overlap between self and group emerges and hence, how individuals identify with groups. According to SCT, the social self and a personal self exist at opposing ends of the same continuum. When individuals identify with a group, the social self becomes salient and the personal self shifts to the background, or *depersonalizes*. As a consequence, individuals will describe themselves in terms of prototypical group characteristics and will "... view themselves as interchangeable exemplars of the social category, rather than unique personalities defined by their individual differences from others" (Turner et al., 1987, p. 50). Thus, based on self-stereotyping principles, social identification should in the first place, refer to an overlap between self and group with respect to socially shared, prototypical group characteristics rather than to characteristics of the individual self.

More recently, *self-anchoring* has been introduced to the literature on (inter-) group processes. In contrast to self-stereotyping, self-anchoring is the process of defining the ingroup in terms of personal attributes. Self-anchoring was described by Cadinu and Rothbart (1996) as a process that can account for ingroup favoritism. They suggested that in some group situations, specifically the Minimal Group Paradigm (MGP; Tajfel, Billig, Bundy, & Flament, 1971), self-stereotyping can hardly be the cognitive process accounting for a mental overlap between self and group, because there are no pre-established group prototypes available. In an MPG, individuals are arbitrarily categorized into groups about which no prior knowledge of prototypical group characteristics exists. Nevertheless, even minimal ingroups are perceived as more favorable than outgroups (Otten & Wentura, 2001). According to Cadinu and Rothbart (1996), this ingroup favoritism is largely based on self-perception. People generally possess favorable beliefs about themselves, which they use to infer ingroup characteristics from. This *bottom-up* process of projecting the self onto the group (i.e., *self-anchoring*) enables people to positively distinguish their ingroup from outgroups.

Recently self-anchoring was also demonstrated for well-established groups (Otten, 2004; Otten & Epstude, 2006). Similar to minimal groups, real groups often also lack clear prototypical characteristics, and are internally structured in terms of roles, subgroups, nested categories and complex, diverse representations (Hogg, Abrams, Otten, & Hinkle, 2004). In these groups, the self can be used as an anchor to fill the cognitive gaps in the group's representation. Self-anchoring is thus not restricted to minimal or novel groups, but also relevant in real group settings. Nonetheless, a recent meta-analysis on self-anchoring literature showed that in general, projection from self to group is stronger in laboratory settings compared to real group settings (Robbins & Krueger, 2005). These findings support the idea that in laboratory settings, the only source of information about the group is the self (as being part of the group), while in real groups both knowledge about the self and group stereotypes are available. Thus, in contrast to laboratory settings, in real group settings mental overlap can reflect both the process of self-anchoring and self-stereotyping.

Recent developments in the disentanglement of self-anchoring and self-stereotyping processes show that, in general, group judgments based on clearly defined self-descriptions (i.e.,

self-anchoring) are made *faster* compared to self-judgments based on clearly defined group-descriptions (i.e., self-stereotyping; DiDonato, Ulrich, & Krueger, 2010; Otten & Epstude, 2006). This finding is often interpreted as evidence for a stronger prevalence of self-anchoring compared to self-stereotyping (Krueger, 2007; Robbins & Krueger, 2005). In contrast, other research shows that self-stereotyping is more profound than self-anchoring, specifically in intergroup contexts (Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006) and in low status groups (Latrofa, Vaes, Cadinu, & Carnaghi, 2010). In sum, there is an ongoing debate about the importance of *self-anchoring* versus *self-stereotyping* in the literature on mental overlap between self and group. Our research contributes to this debate because we argue that *both* self-anchoring and self-stereotyping can occur simultaneously *within* an individual, and that both can contribute to the emergence of mental overlap between self and group. Specifically, we focus on disentangling self-anchoring from self-stereotyping within-subjects, to investigate its distinct impact on social identification.

SELF-ANCHORING AND SOCIAL IDENTIFICATION

One of the most robust findings in the literature on self-anchoring is that projection from self to group is stronger for the ingroup than outgroups (Robbins & Krueger, 2005), which results in more *ingroup favoritism* (Cadinu & Rothbart, 1996; Clement & Krueger, 2002; Gramzow, Gaertner, & Sedekides, 2001; Otten & Wentura, 1999, 2001), and more *cooperation* with ingroup members compared to outgroup members in social dilemma games (Krueger, 2007). Furthermore, thus far projection from self to group has been mainly viewed as a primarily "cold" cognitive process—it can operate without awareness or effort, does not require intentions, and does not respond well to attempts at curbing it (Gramzow et al., 2001; Krueger, 2007; Otten, 2002). From this perspective, self-anchoring occurs automatically; to the extent that the self is perceived as being part of the social category, it is used as a heuristic to define the ingroup. In contrast, when the self is not part of the social category the self does not serve as source of information (Otten, 2002), or at least to a lesser extent (see DiDonato et al., 2010; Krueger & DiDonato, 2008, for a review on self-anchoring in crossed categorizations).

We propose, however, that self-anchoring is not merely a "cold" cognitive process to organize and define the self in a complex social world (i.e., intergroup differentiation), but that self-anchoring can also indicate the *extent* to which people positively affiliate with groups. More specifically, we expect that, besides enhancing perceived similarity between self and group, self-anchoring can also enhance positive feelings about ingroup memberships and a sense of bonding with the ingroup.

To the best of our knowledge, so far there is no unequivocal evidence for a direct link between self-anchoring and social identification. There are a few studies showing that perceived mental overlap between self and group is positively related to social identification (Cadinu & De Amicis, 1999; Coats et al., 2000; Tropp & Wright, 2001, 2003). However, these studies do not distinguish self-anchoring from self-stereotyping as distinct process related to social identification. Furthermore, in these studies there was no focus on differentiating between

different aspects of social identification such as cognitive and affective aspects. Therefore, the question arises whether self-anchoring can account for the level of identification in groups, distinctively from self-stereotyping processes, and whether it specifically relates to certain aspects of identification. The present research is set out to show that social identification does not only rest upon conformity to prototypical ingroup norms, but can also be based on the personal self (see also Postmes & Jetten, 2006; Sedikides & Brewer, 2001).

SELF-CONCEPT STABILITY AND SELF-ANCHORING

When engaging in self-anchoring, the self is used as a cognitive tool to deal with judgmental ambiguity concerning a group's definition. The use of such a tool necessitates that the judgmental anchor is well-defined and diagnostic, rather than ambiguous. Thus far, research on projection from the self to the group has been based on the assumption that a person has access to a rather stable self-concept (Krueger, 2007). There is, however, an extensive amount of literature showing that people differ strongly in the stability and certainty of their self-concepts. Whereas some individuals view themselves in a fairly consistent and clear fashion, others are more influenced by the surrounding context (e.g., Donahue, Robins, Roberts, & John, 1993; Markus & Kitayama, 1991; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). Therefore, in the present research we investigate the impact of *self-concept stability* on self-anchoring, arguing that people with stable self-concepts self-anchor more and hence identify more via this process.

Traditionally, the theoretical framework of self-concept stability is embedded in Swann's (1990) self-verification theory (Kernis & Goldman, 2005). Accordingly, self-concept stability can be defined as the extent to which people's self-concepts are firmly formed and maintained using a wide variety of cognitive and behavioral strategies. It implies that people have the *cognitive resources* (i.e., sufficient self-knowledge) and *motivation* to access their self-concepts and compare information in their social worlds with existing self-representations (Kernis & Goldman, 2005). Different from self-concept clarity (Campbell, Trapnell, Heine, Katz, Lavalley, & Lehman, 1996), self-concept stability does not necessarily relate to self-esteem or self-enhancement (Kernis, 2003). For example, one could have a stable notion of oneself as being a "rigid," but at the same time not gain high self-esteem from this trait. The stability of the trait at the personal level may, however, still result in an overestimation of the amount of rigidity in the ingroup. We consider a stable self-concept as a self-definition which is stable and accessible in different contexts, combined with a willingness to express this self-concept in interactions with different people.

Self-concept stability has been investigated in both the area of cross-cultural and personality psychology. For example, English and Chen (2007) recently showed that Asian Americans were less consistent in their self-descriptions across different contexts than were European Americans. Furthermore, within personality psychology, a recent review article explicated how people with high self-concept stability have more broadly defined self-views, activated in a wide range of contexts and lending greater stability of self-evaluations (Showers & Zeigler-

Hill, 2007). Importantly, Showers and Zeigler-Hill (2007) specifically claim that the relationship between self-constructs and social identities in terms of their content and causality remains an open area for research.

There are only a few studies investigating the impact of the self-concept on self-anchoring, which leaves the field of individual differences in self-anchoring relatively unexplored. Clement and Krueger (2002) were one of the first to hypothesize that there are individual variations in the extent to which people self-anchor, but they did not provide empirical evidence for this claim. Otten and Bar-Tal (2002), however, found that individuals with high need and ability for cognitive structure relied most strongly on the self as a heuristic for ingroup evaluations. Also, Amit, Roccas, and Meidan (2010) showed that people with conservation values engage in more self-anchoring. To our knowledge, there is no study investigating the impact of self-concept stability on self-anchoring. Therefore, we would like to add to previous research, by showing that when people have a stable self-concept, the diagnostic value of the self is strong and, therefore, the self is more extensively used as an anchor to identify with one's ingroups. Furthermore, we expect that self-concept stability exclusively influences self-anchoring as a means to identify with a group, and not self-stereotyping. According to SCT, the personal self depersonalizes with self-stereotyping. Therefore, self-concept stability should have less—if any—influence on this process.

THE PRESENT RESEARCH

The current research is set out to investigate two main hypotheses. First, we hypothesize that self-anchoring is a distinct cognitive route to social identification, independently from self-stereotyping. We also distinguish between affective and cognitive components of social identification. Even though we do not have a specific hypothesis, for explorative reasons we are interested in how self-anchoring and self-stereotyping impact on both aspects of social identification separately. Secondly, we hypothesize that self-concept stability influences the extent to which people self-anchor in order to identify with groups, while we do not expect an influence on self-stereotyping. In Study 1, we investigate the relationship between self-anchoring and social identification among psychology students, and we test our prediction that self-concept stability is positively related to self-anchoring and consequently to social identification. In Study 2, we add self-stereotyping to our model in order to show that self-anchoring is a distinct cognitive route to social identification, independently from self-stereotyping. Moreover, we replicate our finding that self-concept stability is positively related to self-anchoring, but reveal that it has no impact on self-stereotyping.

STUDY 1

Method

Participants and Design

One hundred and twenty-four psychology students (102 women, 22 men) with an average age of 20.51 years

($SD = 4.02$) participated in a computer-based study and received course credits in return. The study was correlational, measuring self-concept stability, self-anchoring, and social identification with psychology students.

Procedure and Materials

Below, we report the procedure and the measures in the order in which they appeared in the study. Before the start of the study, participants were told that they would participate in a study on how personality influences self-perception.

Self-ratings First, participants rated 25 traits on applicability to the self on a Likert-scale ranging from 1 (not at all applicable to me) to 9 (completely applicable to me). The traits were selected from a pilot study (see below, construction self-anchoring score).

Self-concept Stability Secondly, participants filled out a self-concept stability scale based on four items (e.g., “I act the same way no matter who I am with”, “I prefer to be direct and forthright when dealing with people I’ve just met”; $\alpha = .60$) measured on a 7-point scale ranging from 1 (not at all) to 7 (very much). To our knowledge, there is no scale of self-concept stability in social context developed yet. Therefore, our own scale is based on prior pre-testing of items taken from the independence scale by Singelis (1994). Singelis refers to an *independent self* as being (a) unique, (b) being stable in different social situations, and (c) realizing internal attributes and promoting one’s own goals. For our purposes, we considered the last two components most applicable to the self-concept stability scale, given that the definition self-concept stability implies that people have *cognitive resources* and *motivation* to access their self-concepts (Kernis & Goldman, 2005). The uniqueness component, however, should not contribute to self-concept stability, nor to self-anchoring, as people feeling highly unique should not be especially prone to project their personal selves on an entire social category. A pilot study including the independence scale (Singelis, 1994) and a measure of self-anchoring confirmed this reasoning².

Group Ratings Subsequently, participants rated the same 25 traits previously evaluated for the self with respect to their applicability to psychology students on a 9-point scale ranging

from 1 (not at all applicable to psychology students) to 9 (completely applicable to psychology students).

Social Identification Finally, participants filled out an identification questionnaire consisting of nine items ($\alpha = .89$) from the multi-component ingroup identification scale by Leach et al. (2008). Seven items reflected the affective relationship with the group, based on the *satisfaction* and *solidarity* subcomponents of the scale ($\alpha = .88$; e.g., “I feel a bond with psychology students”). Two items reflected the cognitive relationship with the group, based on the *individual self-stereotyping* component of the scale ($r(124) = .73$, $p < .001$; e.g., “I am similar to the average psychology student”). Responses were measured on a 7-point Likert-scale ranging from 1 (not at all applicable) to 7 (very applicable).

Construction of Self-anchoring Score

Self-anchoring scores were based on the 25 trait ratings on the self and group. Earlier research on self-anchoring has typically relied on minimal groups. In the MGP, social identities cannot be derived from pre-existing knowledge of the group. Hence, the overlap between self and group can only be inferred from knowledge of the self rather than vice versa (Gramzow et al., 2001; Otten, 2005). However, in the present study we focus on a real group. Judgments of real groups can be based on knowledge stemming from other sources than the self (e.g., stereotypes). This knowledge might interfere with the diagnostic value of the self. Therefore, finding a method to distinguish self-anchoring from self-stereotyping in real groups is a challenge (Otten & Epstude, 2006).

To be able to measure self-anchoring (and not self-stereotyping), self-group overlap was measured using trait ratings which were, according to an independent pilot study, non-stereotypical for the group psychology students. By focusing on traits, which are clearly defined for the self but are ambiguous with respect to their applicability to the group, projection from self to group can be measured most accurately (Otten, 2004; Otten & Epstude, 2006). Secondly, trait ratings on the self were measured *prior* to making the social category salient, to avoid that the self-ratings could already be affected by self-categorization as psychology student. Finally, again based on a pre-test, we only used traits neutral in terms of valence, to avoid that self-group overlap could also emerge due to valence bias. When using positive traits, overlap might not emerge from projection from self to group, but just because positive traits are generally rated as more applicable for both self and ingroup. Therefore, based on the pre-test, only those traits perceived as neutral in terms of valence were included. Example traits are “musical” and “sportive” (see Appendix for the full trait list).

Self-anchoring was measured using profile correlations (Otten & Wentura, 2001). For each participant, we calculated the correlation between self and group ratings, while controlling for popularity of the item (Krueger, 2008). We controlled for this because a correlation between self and group ratings might not only stem from projection from self to group, but also from the general popularity of the item (Clement & Krueger, 2002; De la Haye, 2000). Item popularity was calculated as the proportion of subjects who had answered positively on an item (6–9 on the Likert scale). The partial correlation between self and group ratings, while controlling

²Our pilot study ($N = 144$) confirmed a well-interpretable three-factor solution of the independence scale (Singelis, 1994) with Eigenvalues over 1, explaining 71% of the variance. One factor consisted of three items focusing on the uniqueness component (e.g., “I enjoy being unique and different from others in many respects”; factor loadings $> .50$). Secondly, one factor comprised of two items focusing on stability of self in different contexts, (“I am the same person at home that I am at school” and “I act the same way no matter who I am with”; factor loadings $> .80$). The third factor consisted of two items focused on realizing internal attributes and promoting one’s own goals (“I prefer to be direct and forthright when dealing with people I’ve just met” and “I feel comfortable using someone’s first name soon after I meet them, even when they are much older than I am”; factor loadings $> .70$). Based on these findings, we constructed a self-concept stability scale with the last two factors, consisting of the four items ($\alpha = .63$), grasping both the cognitive and the motivational part of self-concept stability. Moreover, exploratory analysis based on the pilot study confirmed that there was a significant positive correlation between the last two components of the independence scale (i.e., stability in different social situations, and promoting one’s own goals) and self-anchoring ($r = .21$, $p = .01$) but not between the uniqueness component and self-anchoring ($r = .10$, $p = .22$).

Table 1. Correlations, means, and standard deviations for all variables in Study 1 ($N = 124$)

	<i>M</i>	<i>SD</i>	1.	2.	3.	3.1	3.2
1. Self-anchoring	.26	.35	1	.21*	.36***	.31**	.35***
2. Self-concept stability	4.26	1.04		1	.12	.11	.10
3. Social identification	4.77	.82			1	.96***	.73***
3.1. Affective	5.05	.83				1	.53***
3.2. Cognitive	3.81	1.19					1

* $p < .05$, ** $p < .01$, *** $p < .001$.

for popularity, was used as measure of self-anchoring. Higher scores indicate more self-anchoring.

Results and Discussion

Descriptive statistics are depicted in Table 1. Self-anchoring scores are based on the average correlation between self and group ratings, thus they can vary between -1 and 1 . The average self-anchoring level ($M = .26$, $SD = .35$) is significantly above the midpoint of the scale, $t(122) = 8.43$, $p < .001$, indicating that overall self-group ratings are positively associated.

Correlational Analysis

As predicted, there was a significant positive correlation between self-anchoring and social identification; stronger projection from self to group was associated with higher levels of social identification. Furthermore, self-anchoring was significantly and positively related to both affective and cognitive components of social identification. In line with our expectations, we also found a significant positive correlation between self-concept stability and self-anchoring (see Table 1).

Indirect Effects

In a next step, we examined whether the positive relationship between self-anchoring and social identification is especially facilitated for participants with high self-concept stability. There is no obvious theoretical rationale to predict a direct link between self-concept stability and social identification. Therefore, we tested for indirect effects; in contrast to classical mediation analysis (Baron & Kenny, 1986), indirect effect testing does not require the presence of a direct effect from X to Y (Holmbeck, 1997; Preacher & Hayes, 2004). Specifically, Shrout and Bolger (2002) argue that indirect effects testing is especially applicable in case of testing a *distal* process, because the effect is transmitted *through* additional links in the causal chain. In line with this reasoning, we do not assume that self-concept stability necessarily relates to social identification, but rather, that this relationship is transmitted *through* self-anchoring: To the extent that people with stable self-concepts use the self more as a heuristic tool to define their ingroup, this will also lead to more identification. Therefore, we investigated this indirect effect following the procedure by Preacher and Hayes (2004). Bootstrapping (5000 iterations) revealed that the overall model was significant, $R^2 = .12$, $F(2$,

120) = 8.91, $p < .001$. As already evident from the correlational analysis, self-concept stability was positively related to self-anchoring, $b = .07$, $t(122) = 2.33$, $p < .05$. Furthermore self-anchoring was strongly positively related to social identification, $b = .80$, $t(122) = 3.99$, $p < .001$. The direct effect of self-concept stability on social identification was not significant, $b = .09$, $t(122) = 1.29$, $p = .20$. Most importantly, the indirect path via self-anchoring was significant; with a 95% bias corrected and accelerated confidence interval from .014 to .134³. We also tested indirect effects for the affective and the cognitive components of identification separately. Bootstrap results (5000 iterations) revealed similar results for both affective (confidence interval: LB = .010; UB = .121) and cognitive components of identification (confidence interval: LB = .019; UB = .183).

In sum, the results of Study 1 confirmed our hypothesis that self-anchoring is positively related to social identification. Specifically, we found first evidence that besides merely enhancing perceived similarity between self and group (i.e., the cognitive component of identification), self-anchoring can also predict positive feelings about ingroup memberships (i.e., the affective component of identification). Moreover, as predicted we found that self-concept stability predicted self-anchoring, which subsequently led to more social identification.

STUDY 2

Study 2 was set out to replicate our findings from Study 1 and, more importantly, to include self-stereotyping in our model. Herewith we aim to show that self-anchoring can independently from self-stereotyping account for the level of social identification. Additionally, we investigated whether self-anchoring and self-stereotyping have a different impact on the affective and cognitive aspects of social identification.

Method

Participants and Design

Two hundred and two psychology students (156 women, 46 men) with an average age of 19.40 years ($SD = 1.86$) participated in a computer-based study and received course credits in return.

Procedure and Materials

The procedure of Study 2 strongly resembled Study 1, only this time self-stereotyping was added to the model. Again, we report all measures in the order in which they appeared in the study.

Self-ratings 1 Participants first rated the same 25 non-stereotypical traits as in Study 1 on their applicability to the *self* (self-ratings/time 1).

³We also tested an alternative model with social identification as mediator and self-anchoring as dependent variable to rule out any reversed order models. However, bootstrapping results showed that this model was not significant (LB: $-.013$; UB: $.040$).

Self-concept Stability Secondly, self-concept stability was assessed with the four items from Study 1 ($\alpha = .62$).

Group-ratings Subsequently, participants rated the 25 ambiguously defined traits previously rated for the self (time 1) on their applicability to psychology students. Different from Study 1 however, participants also rated 25 traits which were, according to a pilot study, for psychology students, but again, neutral in valence. Examples of stereotypical traits for psychology students were “sensitive” and “social” (see Appendix for trait list). In total, all 50 traits were offered in random order.

Self-ratings 2 After the trait ratings on the group, participants filled out some filler questions. Subsequently, they were asked to rate the self again, but now on the 25 traits *stereotypical* for psychology students, allegedly for technical reasons (self-ratings/time 2). We based our self-stereotyping score on the group and self-ratings/time 2 of the stereotypical trait dimensions (see construction projection scores).

Social Identification Again, as in Study 1, participants filled out the 9-item measure of social identification ($\alpha = .82$). Seven items reflected the affective component ($\alpha = .83$) and two items reflected the cognitive component ($r(202) = .78$, $p < .001$).

Check Trait Stereotypicality At the end of the questionnaire, we also asked participants to indicate to what extent they thought all 50 traits were stereotypical for psychology students. Herewith, we double-checked whether our pilot tested traits were also either ambiguous or stereotypical for psychology students in this sample. Based on this check, we excluded two traits because they did not confirm the pilot test results (see construction projection scores).

Construction of Projection Scores

The procedure to construct a self-anchoring score was the same as in Study 1; we calculated profile correlations between self-ratings (time 1) and group-ratings on 24⁴ traits, ambiguously defined for the group (Otten & Wentura, 2001), controlling for item popularity. For self-stereotyping, we followed the same procedure, only this time we used profile correlations between 24⁵ *stereotypical* trait ratings on the group and on the self (self-ratings/time 2). Self ratings on stereotypical traits were deliberately measured *after* the group category was made salient (self-ratings/time 2), in order to make sure that the group was readily available as a heuristic to define the self. This procedure is similar to a measurement of self-stereotyping used by Latrofa et al. (2010). They showed that self-stereotyping was most prevalent when it was based on stereotype-relevant rather than irrelevant traits, and when group ratings preceded self-ratings. Again, we calculated profile correlations, controlling for item popularity, to rule out the possibility that self-stereotyping scores would partly be biased due to valence of stereotypical traits. This procedure allowed us to measure the extent to which participants project

stereotypical group characteristics on the self, which is the opposite from self-anchoring. Higher scores indicate higher levels of projection.

Results and Discussion

Descriptive statistics are depicted in Table 2. Self-anchoring, $t(199) = 10.75$, $p < .001$ and self-stereotyping scores, $t(201) = 12.32$, $p < .001$ are significantly above the midpoint of the scale, indicating that for both measures the self and group ratings are positively associated. Furthermore, in contrast to previous research (DiDonato et al., 2010; Guimond et al., 2006; Latrofa et al., 2010; Otten & Epstude, 2006), there were no significant differences between the average level of self-anchoring and self-stereotyping, $t(199) = 1.27$, $p = .21$.

Correlational Analysis

In line with our expectations, we found a significant positive correlation between social identification and both self-anchoring and self-stereotyping (see Table 2). Furthermore, both affective and cognitive components of identification correlated positively with self-anchoring and self-stereotyping. Because we were interested in the distinctive predictive power of both self-anchoring and self-stereotyping on social identification, we first calculated a partial correlation between self-anchoring and social identification, controlling for self-stereotyping. In line with our expectations, this correlation was significant, $r(197) = .21$, $p < .01$. Conversely, we also calculated the partial correlation between self-stereotyping and social identification controlling for self-anchoring, but this correlation was no longer significant, $r(197) = .10$, $p = .17$.

In order to get more detailed insight in the relationship between self-anchoring, self-stereotyping, and social identification, we also calculated partial correlations for both affective and cognitive components of identification separately. Interestingly, we found that after controlling for self-stereotyping, self-anchoring was significantly correlated with the affective component of social identification ($r(197) = .21$, $p < .01$) but not with the cognitive ($r(197) = .09$, $p = .22$). In contrast, when we controlled for self-anchoring, self-stereotyping is significantly correlated with the cognitive component of social identification ($r(197) = .15$, $p < .05$) but clearly not with the affective component ($r(197) = .04$, $p = .55$). In sum, we found that both self-anchoring and self-stereotyping can simultaneously account for the level of social identification.

Table 2. Correlations, means, and standard deviations for all variables in Study 2 ($N = 202$)

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	4.1	4.2
1. Self-anchoring	.24	.32	1	.52***	.17*	.29***	.27***	.19**
2. Self-stereotyping	.27	.31		1	.06	.24***	.18*	.22**
3. Self-concept stability	4.24	1.10			1	.17*	.16*	.12
4. Social identification	4.50	.80				1	.91***	.67***
4.1. Affective	5.01	.82					1	.33***
4.2. Cognitive	3.25	1.25						1

* $p < .05$, ** $p < .01$, *** $p < .001$.

⁴The trait “mathematical” was deleted because this item was counter stereotypical for psychology students and, therefore, not applicable for the self-anchoring measure.

⁵The trait “extravert” was deleted because participants indicated that it was not stereotypical for psychology students.

However, the results from the partial correlations suggest that self-anchoring has more predictive power on affective components of social identification, while self-stereotyping has more predictive power on the cognitive components. Finally, as expected we found a positive correlation between self-concept stability and self-anchoring, but not between self-concept stability and self-stereotyping (see Table 2).

Indirect Effects

As in Study 1, we tested whether self-anchoring explained the relationship between self-concept stability and social identification, but now, we could statistically control for self-stereotyping. We again used the method by Preacher and Hayes (2004) to test for indirect effects, but this time we inserted self-stereotyping as a covariate. First, we focused on the entire social identification scale (both affective and cognitive components). Bootstrapping (5000 samples) revealed that the overall model was significant explaining 11% of variance, $R^2 = .11$, $F(3, 196) = 8.36$, $p < .001$. Self-concept stability was positively related to self-anchoring, $b = .04$, $t(197) = 2.22$, $p < .05$ and self-anchoring was strongly positively related to social identification, $b = .53$, $t(197) = 2.63$, $p < .01$. Different from Study 1, the direct effect of self-concept stability on social identification was also significant this time, $b = .11$, $t(197) = 2.40$, $p < .05$. Most importantly, we replicated the predicted indirect path via self-anchoring, while this time controlling for self-stereotyping. With a 95% bias corrected and accelerated confidence interval ranging from .004 to .053⁶, the indirect effect was significant. This indicates that higher self-concept stability leads to more self-anchoring, which in turn increases the level of social identification.

Secondly, we tested the same model, separately for the affective and cognitive component of social identification. The affective component of identification yielded the same pattern of results as the previous analysis: The overall model was significant explaining 9% of variance, $R^2 = .09$, $F(3, 196) = 6.46$, $p < .001$ and the predicted indirect path via self-anchoring, while controlling for self-stereotyping, was significant; with a 95% bias corrected and accelerated confidence interval from .003 to .052. For the cognitive component of identification, however, the indirect effect was not significant (confidence interval: LB = $-.01$; UB = .05).

In sum, results of Study 2 replicate and complement the findings of Study 1, pointing out the unique role of self-anchoring on social identification, above and beyond self-stereotyping. In addition, we found evidence that self-anchoring is most predictive for affective components of identification, while self-stereotyping is most predictive for cognitive components. Moreover, in line with our expectations, the results show that individuals with a stable sense of self identify with their ingroup to the extent that their level of self-anchoring increases. This finding specifically holds for affective components of identification.

⁶We also tested alternative model with self-stereotyping as mediator and self-anchoring as covariate variable to rule out any reversed order models. However, bootstrap results showed that this model was not significant (LB: $-.0195$; UB: .0060).

GENERAL DISCUSSION

In line with our expectations, we found that self-anchoring is uniquely and distinctively positively related to social identification, after taking self-stereotyping into account. Thus, not only top-down (i.e., *self-stereotyping*) but also bottom-up (i.e., *self-anchoring*) projection processes are positively related to social identification. Hence, other than assumed in SIT (Tajfel & Turner, 1979) and SCT (Turner et al., 1987), both the personal self and the social self seem to act as a source of information to create mental overlap between self and group. Furthermore, we found first evidence that self-anchoring and self-stereotyping might account for different components of social identification, such that self-anchoring is mainly related to affective, while self-stereotyping to cognitive components. Finally, we showed that individuals with high self-concept stability self-anchor more and that this significantly predicts their degree of identification, even after controlling for self-stereotyping.

Self-anchoring or Self-stereotyping?

Recently, DiDonato et al. (2010) suggested that self-anchoring is most dominant in the creation of mental overlap between self and group, compared to self-stereotyping processes. On the other hand, there is also evidence indicating the reverse, namely that self-stereotyping is the dominant process behind self-ingroup overlap (Guimond et al., 2006; Latrofa et al., 2010). The results of our studies complement this debate from both a methodological as well as a theoretical perspective. In our studies, we find comparable levels of self-anchoring and self-stereotyping, suggesting that, in contrast to both viewpoints, the *strength* of both projection processes may be equally high. Therefore, we propose an integrated perspective, such that both processes can contribute to self-ingroup overlap simultaneously. However, why then, is there such strong evidence for the dominance of one process over the other in previous literature? We suggest that this might be due to methodological aspects in the respective research.

On the one hand, support for the dominance of self-anchoring is typically based on the observation that response-times for self-anchoring are faster compared to self-stereotyping (DiDonato et al., 2010; Otten & Epstude, 2006). However, the fact that the self is more accessible and conceptually richer compared to group-representations and, therefore facilitates response times more strongly, does not imply that self-stereotyping does not occur, but merely that it is not as readily accessible. In support for this, we find that levels of self-anchoring and self-stereotyping based on profile correlations are equally high, when both concepts are measured on a more explicit level and without time constraints.

On the other hand, a dominance of self-stereotyping over self-anchoring in previous studies (e.g., Guimond et al., 2006) could be driven by the fact that self-ingroup overlap was exclusively measured with traits stereotypical for the group. This argument does not apply to the research on self-stereotyping by Latrofa et al. (2010), who did in fact differentiate between stereotypical and ambiguous traits. But they did so in a single order design (self-group, Study 2). Therefore, since the group category was already

made salient at the start of the study, self-ratings could already have been contaminated by group stereotypes, which could explain the dominance of self-stereotyping over self-anchoring.

We believe that our approach of measuring self-anchoring and self-stereotyping based on explicit trait ratings, with both ambiguous and stereotypical traits, and taking into account the order of ratings, is an elegant and methodologically sound way of measuring both concepts simultaneously. Consequently, based on our findings we suggest that maybe the question is not so much “Self-anchoring or self-stereotyping?”, but rather “When self-anchoring and when self-stereotyping?”

Individual Differences in Self-anchoring

Our finding that people with high self-concept stability project their personal self more strongly on their ingroup is a first step in trying to answer the question “When do people self-anchor?” Our results underline the importance of investigating the impact of individual differences on self-anchoring processes and add to the relatively little research that has addressed this topic so far (Amit et al., 2010; Otten & Bar-Tal, 2002). Furthermore, based on the work by cross-cultural researchers such as English and Chen (2007) and Markus and Kitayama (1991), it would be interesting to apply the present findings on individual differences in the cognitive processes underlying social identification to an intercultural setting. Since the personal self is especially emphasized in Western cultures, one might hypothesize that self-anchoring should be more prevalent in individualistic cultures, while self-stereotyping should be the dominant process in collectivistic cultures.

Cognitive Routes to Identification

In recent years, the role of the personal self has received increasing attention in social identification research (e.g., Jetten, Postmes, & McAuliffe, 2002; Otten, 2002; Postmes, Spears, Lee, & Novak, 2005; Sedikides & Brewer, 2001; Spears, 2001). In line with these developments, we found that the projection of the personal self onto the group bolsters social identification, distinctively from self-stereotyping processes. At first glance, self-anchoring even seemed more strongly related to social identification than self-stereotyping. However, a closer look at the different aspects of identification showed us that self-anchoring is more strongly related to affective aspects, while self-stereotyping especially relates to cognitive aspects of identification. Again, this underlines that self-anchoring and self-stereotyping do not need to compete with each other in their prevalence of and importance for social identification; rather, our results suggest that they are responsible for different aspects of social identification.

These findings open up new venues for research on how different cognitive routes to mental overlap, fulfill different social identification needs. Specifically, when linking our results to Optimal Distinctiveness Theory (Brewer, 1991), one could argue that self-anchoring taps mainly in the need to belong (based on positive feelings of group members toward their group on intragroup level), while self-stereotyping

mainly taps into the need to be different (based self-definition in terms of group prototypes to create intergroup differentiation).

Limitations and Implications

One important limitation of our studies is that they are correlational. Even though previous research suggests that mental overlap between self and group is a *precondition* for social identification (e.g., Tropp & Wright, 2001), the design of our studies does not allow us to straightforwardly show this causality. Therefore, future research should either adopt a longitudinal design or provide a manipulation of both types of projection processes to empirically investigate their causal impact on social identification.

Furthermore, it should be noted that—with the exception of our pilot study on the self-concept stability scale, in which we referred to the category of Dutch citizens—we tested our predictions in only one social context, namely among psychology students. Possibly, group context itself determines whether self-anchoring or self-stereotyping is most strongly related to identification. For example, one could argue that a broad social category such as psychology students shares many features of minimal groups, like a diffused image of group characteristics and arbitrariness of boundaries (Rothbart, 1993). This might explain why in our study, self-anchoring is slightly more diagnostic for the level of identification than self-stereotyping. Moreover, it is easy to conceive that for other types of groups, which have a much more sharply defined set of group norms than the group of psychology students (e.g., religious movements like the Scientology church), self-stereotyping might be more prevalent (Hogg, 2004). Thus, the extent to which self-anchoring or self-stereotyping is indicative for identification might depend on the prescriptiveness of group norms.

Finally, our research might have implications for social identification in diverse groups. One could argue that self-anchoring might facilitate identification in heterogeneous groups, because it offers the opportunity to acknowledge individual differences between group members. In contrast, self-stereotyping is largely based on *similarity* between group members, stemming from the assimilation to group prototypes, and might therefore be more applicable in homogeneous groups. By encouraging bottom-up identity formation (i.e., self-anchoring), we might foster a sense of belongingness among group members from different (cultural) backgrounds.

Conclusion

Our research provides first evidence that self-anchoring can facilitate social identification, above and beyond self-stereotyping. In addition, self-anchoring and self-stereotyping seem to affect different aspects of social identification. Therefore, both the social and the personal self provide an answer to our question “How do people identify with groups?”, as they both function as distinct sources supporting group identification.

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APPENDIX

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Trait list of non-stereotypical and stereotypical traits for psychology students.

Non-stereotypical traits Study 1 and 2 ^a	Stereotypical traits Study 2 ^b
Impulsive	Calm
Fashionable	Sensitive
Sweet tooth	Reader
Thrifty	Curious
Handy	Thoughtful
Environmentally conscious	Analytic (counter)
Mysterious	Athletic (counter)
Diplomatic	Social
Insecure	Technical (counter)
Extravagant	Emotionally intelligent
Religious	Concern for others
Vain	Interested in others
Musical	Pragmatic (counter)
Nature lover	Self-critical
Introvert	Observant
In itself	Openminded
Artistic	Emotional
Tidy	Good listener
Edgy	Self-conscious
Sportily	Profound
Animal lover	Austere (counter)
Theatrical	Thinker
Fond of traveling	Talker
Politically involved	Sympathetic
Arithmetic	

^aIn Study 2 participants indicated that the trait “arithmetic” (first column) was counter-stereotypical with respect to psychology students. Therefore, we did not use this trait to measure self-anchoring and excluded it from the trait list in Study 2. ^bTo ensure an equal amount of variance on both the non-stereotypical and the stereotypical traits, we also included counter-stereotypical traits for psychology students (i.e., traits that are typically not applicable to psychology students). Those are referred to as “counter” in the second column.